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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,609	03/07/2001	John David Begin	60314-196	7492

7590

04/20/2004

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EXAMINER

TONG, NINA C

ART UNIT	PAPER NUMBER
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2632

DATE MAILED: 04/20/2004

21

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,609

Applicant(s)

BEGIN, JOHN DAVID

Examiner

Nina Tong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 5, please cancel claim 5 since the claimed feature is already claimed in the independent claim 4.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1,2,4,5,6,10,13,14 are rejected under 35 U.S.C. 102(e) as being anticipated by Schiffmann (6,292,759).

Regarding claims 1,2,6, Schiffmann discloses a vehicle attitude angle estimation, which comprises the claimed providing longitudinal acceleration information (19), the claimed

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providing vertical acceleration information (21), the claimed determining pitch upon the longitudinal and vertical acceleration information (fig.1,3B), the claimed using pitch to propagate a previous position to a current position is inherently included in the estimated roll and pitch, the claimed change in pitch is inherently included in the estimated pitch information (which is same as the change in pitch), the claimed heading information to propagate a previous position to a current position (13,19,15,21,27and/or 34).

Regarding claims 4,5, Schiffmann discloses a vehicle attitude angle estimation, which comprises the claimed providing longitudinal acceleration information (19), the claimed providing vertical acceleration information (21), the claimed heading information (13,19,15,21,27and/or 34), determining roll upon the longitudinal and vertical acceleration information and heading information (fig.1,2,3A), the claimed using roll to propagate a previous position to a current position is inherently included in the estimated roll and pitch,

Regarding claim 10, Schiffmann discloses a vehicle attitude angle estimation, which comprises the claimed providing longitudinal acceleration information (19), the claimed providing vertical acceleration information (21), the claimed speed information (34), the claimed determining pitch upon the longitudinal and vertical acceleration information and speed information (fig.1,3B), the claimed using pitch to propagate a previous position to a current position is inherently included in the estimated roll and pitch.

Regarding claims 13,14, Schiffmann discloses a vehicle attitude angle estimation, which comprises the claimed inertial sensor with a plurality of signals (fig.1), determining pitch upon the received signals (figs.1 and 3b), and the claimed “propagating a previous position to a current position based upon the plurality of signals and said pitch as determined in said step b” and “during the vehicle is moving” is inherently included in the estimated pitch and roll information and the vehicle is inherently in the motion during the determination process.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3,8,9,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiffmann (6,292,759) in view of Sheikh et al. (6,088,653).

Regarding claims 3,8,9,12, Sheikh et al. teaches the concept of employing GPS receivers to determine the attitude of the vehicle instead of using the gyros or rotation sensors. Also, it is well-known in the art of employing GPS to obtain the vehicle speed information. As long as the function is the same, employing various method to determine the attitude and vehicle speed information would not constitute an inventive step but an obvious design choice. It would have

been obvious to one of ordinary skill in the art at the time the invention was made to employ the well-known GPS to determine the attitude (replacing the sensors) and vehicle speed information in Schiffmann as taught Sheikh et al. for performing the same function as desired and as an obvious design choice.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7,15,16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiffmann (6,292,759).

Regarding claim 7, it is well-known in the art of providing heading information from the map data in the navigation system. As long as the system is function the same, employing various method to determine the heading information would not constitute an inventive step but an obvious design choice. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the well-known map data to determine the heading information in Schiffmann for performing the same function as desired and as an obvious design choice.

Regarding claim 15, although Schiffmann fails to specify the claimed monitoring if the vehicle is not moving then perform the determination of the pitch and position. As long as the function is the same, having the function/system to be performed only when the vehicle is moving or when the vehicle is not moving, would not constitute an inventive step but an obvious design choice. It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform system only when the vehicle is not moving in Schiffmann for performing the same function as desired and as obvious design choice.

Regarding claim 16, Schiffmann does mentions that the system here is to minimize the noise/error present, i.e. the system of Schiffmann is inherently included the determining low noise means. Even if it was disagreed by the applicant, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the system of Schiffmann to monitor/determine the low noise, which is well-known in the art of the inertial sensing means, for providing a more accurate system.

Response to Arguments

8. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Astengo disclosed a pitch signal calculating means.

Chowdhary disclosed a system for inertial guidance for an automobile navigation system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nina Tong whose telephone number is 703-305-4831. The examiner can normally be reached on Mon-Wed. (9:30 -8:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on 703-308-6730. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/16/04
Nina Tong
Primary Examiner
Art Unit 2632

